

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Appln. No. 09/888,656

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. By this Amendment, Applicant has added new claim 14. Thus, claims 1-14 are pending in the application with claims 6-13 withdrawn from consideration as being directed to a non-elected invention. In response to the Office Action (Paper No. 6), Applicant respectfully submits that the pending claims define patentable subject matter. By this Amendment, Applicant has amended claims 1-5 to improve clarity.

Claim 1 is rejected under 35 U.S.C. § 102(e) as being anticipated by Umeda et al. (U.S. Patent No. 6,124,660; hereafter “Umeda”). Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Baines (U.S. Patent No. 4,705,972). Claims 3-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Umeda in view of Baines and ordinary skill in the art. Applicant respectfully submits that the claimed invention would not have been anticipated by or rendered obvious in view of the cited references.

Independent claim 1 recites, in part, “a stator winding ... comprising a plurality of conductors including end portions joined to each other to form joint portions, wherein said joint portions comprise a metal having a melting point which is lower than a melting point of said conductors.” As shown in Figures 1 and 2 (illustrating a first embodiment of the present invention), the conductors 33 forming the stator winding are joined to each other at end portions 33a. An insert metal 33f, having a lower melting point than that of the conductors 33, is interposed between the end portions 33a of the conductors 33 and melted to form a joint portion 33e in which the end portions 33a are joined together. Since the insert metal 33f has having a

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lower melting point than that of the conductors 33, the present invention provides a stator in which an amount of heating during joining of the conductors may be reduced, and, since the temperature rise in the conductors may be reduced, it is possible to prevent damage to an insulating coating of the conductors.

Although the Examiner contends that Uemda (Figure 7) discloses all of the features of claim 1, Umeda simply discloses that ends 61d of conductor segments 61 (made of aluminum) are positioned in parallel with each other, and a welded portion 61e is formed at the portion where the ends 61d are adjacent to each other. That is, Umeda teaches that the ends 61d of the aluminum conductor segments 61 are directly joined together by welding without the addition of a separate metal interposed between the ends 61d of the conductor segments 61 (see column 7, lines 16 and 17; and column 8, lines 25-42). However, as discussed on page 3 of the present application, since the ends 61d of the conductor segments 61 of Umeda are heated to the melting point for welding, an insulating coating in the vicinity of the ends 61d of the conductor segments 61 may be damaged such that a short-circuit failure may occur between adjacent conductors. Therefore, Applicant respectfully submits that it is quite clear that Umeda does not teach or suggest that the end portions of the conductors are joined to each other to form joint portions which comprise a metal having a melting point which is lower than a melting point of the conductors, as required by the claim 1.

Although Baines (cited in the rejections of the dependent claims) is directed to a solderless electrical connection between a wire and an electrical contact forming part of a permanent magnet motor, the Examiner cites the “Background” section (column 1, lines 15-18)

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of the reference for disclosing that an wire end of a brush gear may be electrically connected to an electrical contact (made from a material such as copper or copper alloy) by conventional flux solder. However, Applicant respectfully submits that it is also quite clear that Baines does not teach or suggest the above-described features of claim 1 which are missing from Umeda.

Further, with regards to dependent claim 2, Applicant respectfully submits that the Examiner's assertion that "Baines discloses ... that it is well known in the art to use copper or a copper alloy as a molten metal" is incorrect since, as discussed above, the reference merely indicates that the electrical contact (terminal) is made of copper or copper alloy and is joined to the brush gear wire by conventional solder flux (i.e., the electrical contact is not melted or fused to the brush assembly wire).

Accordingly, Applicant respectfully submits that independent claim 1, as well as dependent claims 2-5, should be allowable because the cited references, alone or combined, do not teach or suggest all of the features of the claims.

By this Amendment, Applicant has added new dependent claim 14 to further define the claimed invention. Applicant respectfully submits that the cited references do not teach or suggest "said metal is interposed between said end portions of said conductors", as claimed.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,



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PATENT TRADEMARK OFFICE

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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A stator for a dynamo-electric machine comprising:
a stator core having a plurality of slots[,]; and
a stator winding installed in said slots [and], said stator winding comprising a plurality of conductors [joint] including end portions [thereof] joined to each other[;] to form joint portions, wherein[,] said joint portions [of said joint end portions] comprise a [molten] metal [of] having a [lower] melting point which is lower than [that] a melting point of said conductors.
2. (Amended) A stator for a dynamo-electric machine according to claim 1, wherein[:]
said [molten] metal [is] comprises an alloy of a material of said conductors and an additive metal.
3. (Amended) A stator for a dynamo-electric machine according to claim 2, wherein[:]
said additive metal is a Cu--P alloy.
4. (Amended) A stator for a dynamo-electric machine according to claim 2, wherein[:]
said additive metal [is] comprises Ag or an Ag alloy.

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5. (Amended) A stator for a dynamo-electric machine according to claim 2, wherein[:] said additive metal [is] comprises Sn or an Sn alloy.

Claims 14 is added as a new claim.

IN THE ABSTRACT OF DISCLOSURE:

The abstract is changed as follows:

The present invention provides a stator for a dynamo-electric machine and a method for manufacturing the same in which an amount of heating during joining (welding) may be reduced, and, an insulating coating of conductors may be prevented [form] from damage. In a stator 2 for a dynamo-electric machine comprising a stator core 32 having a plurality of slots 35, and a stator winding installed in the slots 35 and comprising a plurality of conductors 33 [joint] including end portions 33a [thereof] which are joined to each other[,] to form joint portions 33e. The joint portions [of the joint end portions 33a] 33e comprise a [molten] metal 33g, 33f of a lower melting point than that of the conductors 33.